

# **A locally directionally maximin test for a multidimensional parameter with order-restricted alternatives**

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## **Abstract**

In this paper we propose a locally directionally maximin test which is a generalization of the locally most powerful test for the case of a multidimensional parameter. We show that for the two-dimensional Gaussian distribution the locally directionally maximin test is better than the likelihood ratio test in the sense of the local power. For locally asymptotically normal experiments we construct an asymptotic locally directionally maximin test. © Allerton Press, Inc., 2011.

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## **Keywords**

Hypothesis testing, Likelihood ratio test, Locally asymptotically normal experiments, Locally directionally maximin test, Locally most powerful test, Multidimensional parameter, Optimal linear test, Order-restricted alternatives